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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/680,776

10/06/2000

Michael G. Gyde

H0001626

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7590

03/01/2004

Honeywell International Inc.
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EXAMINER

LEE, HWA C

ART UNIT

PAPER NUMBER

2672

DATE MAILED: 03/01/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/680,776

Applicant(s)

GYDE ET AL.

Examiner

Hwa C Lee

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. This office action is in response to the application filed on 10/06/2000, with Michael G. Gyde and Mark I. Snyder as the Inventors.
2. The application is entitled: "METHODS AND APPARATUS FOR DISPLAYING INFORMATION".
3. Claims 1-20 are pending in the application, with claims 1, 6, AND 14 being independent claims. Preliminary amendment, A1, has been received and the respective claims have been amended to the application.

Claims

4. The prior art referenced to make the respective claim rejection is attached enclosed by ().

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Hargrove, U.S. Patent No., 5,371,847.
7. In regards to claim 1, Hargrove clearly discloses ***a display comprising a plurality of panels, wherein at least one of the panels is selectively configurable to have a size corresponding to a defined selection of sizes, and wherein at least one of the limited selection of sizes is substantially 1/6, 1/3, and 2/3 of the display.***

- Hargrove discloses in the “Background of the Invention” section, that Microsoft® Windows allows the user to automatically arrange a plurality of windows in a tiled arrangement. The size of each tiled window depends on the number of windows to be tiled, and tiling five windows results in four of the windows having a size, which is ***substantially 1/6 of the display*** (Col. 1, lines 7-56 and FIG. 1-7). The ***selection of sizes is limited*** since the size of the windows (panels) depends on the total number of windows (panels) to be tiled and the resizing of the windows is performed automatically by Microsoft® Windows based on that number of windows.
- Hargrove also discloses a method and system for specifying the arrangement of windows on a display device in accordance with a user-specified arrangement (Col. 2, lines 18-31). The user is allowed to specify the number of rows and columns to display on the grid, which determines the size of each panel (Col. 2, lines 4-48 and FIG 14). The selection of panel sizes is limited by the user interface, wherein the line segments that physically makeup the rectangular panel are added or removed by the user (FIG 14 and Col. 48 – Col. 5, line 2). Further, FIG. 11B clearly shows two of the panels having a size substantially 1/3 of the display; FIG. 12B clearly shows one of the panels having a size substantially 1/3 of the display and two of the panels having a size substantially 1/6 of the display; FIG. 13B clearly shows two of the panels having a size substantially 1/6 of

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the display and one of the panels having a size substantially $\frac{2}{3}$ of the display.

8. In regards to claims 2, the same basis and rationale for claim rejection as applied to claim 1 are applied. The additional limitation of panel size of substantially $\frac{1}{2}$ and $\frac{3}{3}$ of the display are disclosed by Hargrove above, since Hargrove allows the user to selectively determine the size of the panels by selecting the number of rows and columns and subtracting the necessary line segments to create the desired panel size.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hargrove in view of Microsoft® Excel 2000 (Copyright© 1985-1999).

12. In regards to claim 3, Hargrove discloses the limitation of multiple programs displaying information simultaneously on the same display using plurality of tiled display windows and the limitation of allowing the user to manually resize each window as

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applied to claims 1-2 above, but does not explicitly disclose the limitation of a ***modification interface for changing at least one of the selected display content and the size of the panel***. Microsoft® Excel 2000, however, discloses the said limitation.

- The panel size can be resized by clicking the right lowermost corner and dragging the pointer using a standard mouse user interface (Page 3). In addition, contents of each panel can be changed by using the 'open' tool bar to open a new file for a specific panel (Page 4) or by creating new content manually in the panel. Further, each panel comprises a 'workbook', which comprises a plurality of 'worksheets' that new contents can be inputted onto (Page 5).

13. It would have been obvious to one of ordinary skill in the art to take the teachings of Hargrove and to add from Microsoft® Excel 2000, the modification interface for changing the panel size and content in order to manually resize each panel to a desired size and to allow a plurality of contents to be displayed on each panel of the display unit. In certain application, such as aviation, it is essential to monitor a plurality of information simultaneously and to shift from one content to another. It is also essential to resize the panel having the desired content in order to closely monitor the desired content at certain situation, such as flight altitude and speed during takeoff and landing. In addition, both references are directed to displaying a plurality of panels on a display unit, which the panel sizes are selectively configurable.

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14. In regards to claim 4, the same basis and rationale for claim rejection as applied to claims 1-3 are applied. The limitations of a menu and a plurality of tabs are disclosed by Microsoft® Excel 2000 (Pages 5-7).

15. In regards to claim 5, the same basis and rationale for claim rejection as applied to claims 1-4 are applied. Both Hargrove and Microsoft® Excel 2000 discloses method of allowing the user to selectively configure the content and the size of each panel.

16. Claims 6,10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al., U.S. Patent No., 6,072,473 in view of Briffe et al., U.S. Patent No., 6,112,141.

17. In regards to claim 6, Muller et al. and Briffe et al. in combination disclose the following limitations.

A cockpit display system, comprising:

- Muller et al. discloses a cockpit display system comprises of a plurality of display units, wherein each display unit is disposed to displaying different set of flight information (FIG. 1, 3, 5 and Col. 3, line 34 – Col. 23)

(a) a plurality of monitors for displaying a plurality of sets of information; and

- The same basis and rationale for claim rejection as applied to the preamble above are applied. The plurality of display units (FIG. 1, No. 7-12) are specifically a plurality of monitors.

(b) a processor communicating with the plurality of monitors, wherein the processor provides a plurality of panels, and wherein at least one of the

panels is selectively configurable to have a size corresponding to a defined selection of sizes, and wherein at least one of the limited selection of sizes is substantially 1/6, 1/3, and 2/3 of the display.

- Muller et al. also discloses the limitation of a processor controlling a plurality of display elements (monitors) (Col. 2, lines 19-28).
- Muller et al. discloses the limitation of having each display element consisting in a screen or part of a screen, and a same screen can comprise several separate areas each comprising subset of the display element called, "display sub-element". In addition, the shape and disposition of the display sub-elements may vary within their respective screens, depending on the function mode at the time. Thus, each display element (monitor) comprises of a plurality of panels, and each panel shape and size changes depending on the function mode (Col. 4, lines 14-23). In addition, Muller et al. discloses using a sensitive surface (one per pilot) as a user input device to interact with the display elements and sub-elements. The sensitive surface has several operating modes, i.e. a plurality of display element selection modes, in each of which the sensitive surface is virtually divided into a plurality of area corresponding **isomorphically** with the disposition, either of the display elements inside the cockpit or the display sub-elements inside any one of the display elements (Col. 4, lines 24-32; Col. 4, lines 58-65; Col. 5., line 39 – Col. 6,

line 7). The sensitive surface specifically performs the function of selectively changing the size of each display panel.

- Muller et al. do not explicitly disclose the limitation of ***defined selection of panel sizes at least one of substantially 1/6, 1/3, and 2/3 of the display***, but Briffe et al. discloses the said limitation. Briffe et al. clearly discloses automatically compressing the display panel representing maps and charts from $\frac{1}{4}$ to $\frac{1}{6}$ of the screen (Col. 16, lines 43-46); allocating at least $\frac{1}{3}$ of the screen size for displaying horizontal situation (Col. 18, lines 39-42); and reducing the size of the vertical profile display from $\frac{1}{4}$ to $\frac{1}{6}$ of the screen (Col. 18, lines 42-44).
- In addition, the applicant fails to disclose the criticality of the specific sizes, ***1/6, 1/3, and 2/3 of the display***. The different sizes for the panels depend on the importance of the information displayed on each panel for different situations and the specific functions being executed. More important data are displayed on panels with a larger portion of the total display area, but there is no criticality of the specific sizes.

18. It would have been obvious to one of ordinary skill to take the teachings of Muller et al. and to add from Briffe et al. the method of expanding and shrinking the size of panels on the display in order to expand the panels that displays more important data and to shrink the panels that display less important data depending on the situation and the instrument function being executed. In addition, both references are directed to a

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cockpit display system, wherein a plurality of display panels are display a plurality of information.

19. In regards to claim 10, the same basis and rationale for claim rejection as applied to claim 6 are applied.

20. In regards to claim 13, the same basis and rationale for claim rejection as applied to claims 6, and 11-12 are applied. All references disclose the limitation of a plurality of panels presenting a selected content of a plurality of display contents as applied to claim 6 above. Each panel representing a specific content is sized appropriately to correspond to the selected content.

21. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al., U.S. Patent No., 6,072,473 in view of Briffe et al., and further in view of Palmer et al., U.S. Patent Application Publication No., 2003/0025719.

22. In regards to claim 11, Muller et al. and Briffe et al. disclose the limitation of a plurality of display panels, wherein at least one of the panels presenting a plurality of display contents, which specifically is ***at least one of the panels presenting a first selected display of content of a plurality of display*** contents, but do not disclose the limitation of ***a modification interface for changing at least one of the selected display content and the size of the panel.***

- Palmer et al. discloses a display unit with a plurality of panels displaying a plurality of information, wherein the navigation, communication and control functions are configurable as desired (Paragraphs [0025] – [0027]), which specifically are selectively configurable panels. Palmer also discloses the

limitation of expanding the sizes of the COM 1, NAV 1, and HF 1 display panel and returning to the previous smaller display size (Paragraphs [0029] – [0031]). Expanding and returning the size of the panels are specifically changing the size of the panels.

- Palmer et al. also discloses the limitations of the ½ page toggling button, page selection display segment, next page advancing button, and previous button allow the user to change the content of the panel to the next page (FIG. 1, No. 110; FIG. 2, No. 206; FIG. 3, No. 306; FIG. 4, upper left-hand corner; and Paragraph [0027]). In addition, a drop down menu incorporated into the COM ½ display segment and the HF ½ display segments allows another way to change contents for the panel (Paragraph [0028]). Further, a menu button or any type of selection signal in the COM 1 area allows for expanding the panel area and returning to its previous smaller display size (Paragraph [0029]).

23. It would have been obvious to one of ordinary skill in the art to take the teachings of Muller et al. and Briffe et al. and to add from Palmer et al. the method of modification interface in order to provide to the user a standard and intuitive graphical interface for changing the panel size and content. A pilot needs to easily interface with the display during a flight, and the said modification interface allows the pilot to intuitively selectively change the display in order to display the desired content in the desired size. In addition, both references are directed to a cockpit display system, wherein a plurality of display panels are display a plurality of information.

24. In regards to claim 12, the same basis and rationale for claim rejection as applied to claim 11 are applied. A tab is one type of a button, and thus the said buttons disclosed by Palmer et al. as applied to claim 11 above are specifically a plurality of tabs.

25. Claims 7-8, 14, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. in view of Briffe et al. as applied to claims 6, 10 and 13 above, and further in view of Factor, U.S. Patent No. 6,281,810.

26. In regards to claim 7, Muller discloses a processor controlling a plurality of monitors displaying a plurality of information, which specifically is ***a processor providing a first set of information to a first monitor and a second set of information to a second monitor*** as applied to claim 6 above, but does not disclose the limitation of ***the processor configured to provide the second set of information to the first monitor if the second monitor fails.***

27. Factor discloses the limitation of two independent projectors with the first projector displaying a first set of information on the bottom row and the second projector displaying a second set of information on the top row of the same LCD monitor. When one projector fails, the other projector displays both the first and second set of information on both the top and bottom rows of the LCD monitor (Col. 5, lines 21-53). Factor also discloses two independent computer/projector systems (Col. 2, lines 17-40), and a computer specifically comprises of a processor. The same concept using the two projectors as disclosed by Factor is applied to two monitors as applied to claim 6 above. Just as it is the case for the two projectors, if one monitor fails, the other monitor

displays all information, which specifically is displaying the second set of information on the first monitor.

28. It would have been obvious to one of ordinary skill in the art to take the teachings of Muller et al. and Briffe et al. and to add from Factor the method of displaying two sets of information using two projectors, wherein the first projector displays the second set of information when the second projector fails in order to provide independent redundant display system to provide backup display of all critical cockpit instrument information.

The same concept is applied to the monitors, wherein the first monitor displays the second set of information if the second monitor fails. In addition, all references are directed to a cockpit display system, wherein a plurality of display panels are display a plurality of information.

29. In regards to claim 8, the same basis and rationale for claim rejection as applied to claims 6-7 are applied. Briffe et al. discloses the limitation of changing the size of the panel as applied to claim 6 above, and Factor discloses the limitation of displaying the second set of information on the first monitor if the second monitor fails. In order to display both the first and second set of information on the first monitor, the first panel representing the first set of information must be reduced in size in order to display the second set of information along with the first set of information on the first monitor.

30. In regards to claim 14, the same basis and rationale for claim rejection as applied to claims 6 and 7 are applied.

31. In regards to claim 17, the same basis and rationale for claim rejection as applied to claims 10 and 14 are applied.

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32. In regards to claim 18, the same basis and rationale for claim rejection as applied to claims 10 and 13-14 are applied.

33. In regards to claim 19, the same basis and rationale for claim rejection as applied to claims 8 and 14 are applied.

34. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. in view of Briffe et al., as applied to claims 6, 10 and 13 above, and further in view of Factor as applied to claims 7-8, 14, and 17-19 above, and further in view of Palmer et al. as applied to claims 11-12 above.

35. In regards to claim 15, the same basis and rationale for claim rejection as applied to claims 14 and 11 are applied.

36. In regards to claim 16, the same basis and rationale for claim rejection as applied to claims 12, and 15 are applied.

37. Claims 9 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. in view of Briffe et al. as applied to claims 6, 10 and 13 above, and further in view of Factor as applied to claims 7-8, 14, and 17-19 above, and further in view of Nakajima et al., U.S. Patent Application Publication No. 2001/0055029.

38. In regards to claim 9, Muller et al., Briffe et al., and Factor in combination disclose the limitation of ***a processor configured to provide the second set of information to the first monitor if the second monitor fails*** as applied to claims 7-8, 14, and 17-19 above, but do not disclose the limitation of ***the first set of information corresponds to a first priority, and wherein the processor is configured to provide***

the second set of information to the first monitor only if the second priority is higher than the first priority.

- Nakajima et al. discloses a switching control connected to a display, wherein, the input signal having the highest priority among the two host computers is allowed to be displayed on the display monitor (Paragraph [0044]). Thus, the first set of information from the first host computer corresponds to a first priority, and the second set of information from the second host computer corresponds to a second priority. The second set of information is displayed on the first monitor only if the second priority is higher than the first priority.

39. It would have been obvious to one of ordinary skill in the art to take the teachings of Muller et al., Briffe et al., and Factor and to take from Nakajima et al. the method of assigning priorities to a plurality of input information and to allow the second set of information to be displayed on the first monitor only if the second priority is higher than the first priority in order to determine the importance of all sets of information and to display only those information with the highest importance (priority) in case of display monitor failure. When a monitor fails, the information on the failed monitor is compared with the information on the first monitor to determine which set of information is more important (higher priority). It would have been obvious to allow the second set of information to be displayed on the first monitor only if the second priority is higher than the first priority.

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40. In regards to claim 20, the same basis and rationale for claim rejection as applied to claims 8-9 and 14 are applied.

Conclusion

41. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art is directed to a plurality of LCD monitors for use in cockpit display, wherein when one LCD fails, the second LCD displays all information previously displayed on the first LCD.

U.S. Patent No.

Inventor(s)

4,371,870

Biferno

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hwa C Lee whose telephone number is 703-305-8987. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 703-305-3885. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hwa C Lee
Examiner
Art Unit 2672

HCL



JOSEPH MANCUSO
PRIMARY EXAMINER